

1. (Amended) A method of manufacturing a flash memory device, comprising the steps

of:

sequentially forming a tunnel oxide film and a first polysilicon film on a semiconductor substrate;

etching the first polysilicon film and a first portion region of the tunnel oxide film;

forming a lower oxide film on the semiconductor substrate;

performing a nitrification process to form a nitrogen layer below the lower oxide film;


performing an annealing process using an oxygen gas so that the nitrogen layer is transferred to a surface of the lower oxide film, thus forming a nitride film;

forming an upper oxide film on the semiconductor substrate to form a dielectric film including the lower oxide film, the nitride film, and the upper oxide film;

sequentially forming a second polysilicon film, a tungsten silicide film, and an anti-reflection film on the semiconductor substrate;


patterning the anti-reflection film, the tungsten silicide film, the second polysilicon film, and the dielectric film to form a control gate; and

patterning the first polysilicon film and the tunnel oxide film to form a floating gate.




2.(Amended) The method according to claim 1, wherein the lower oxide film is formed using DCS gas and one of N_2O and NO gas at a temperature of 810-850°C.

3.(Amended) The method according to claim 1, wherein the lower oxide film is formed to a thickness of 35-100Å at a deposition rate of 4-10Å/min.



4.(Amended) The method according to claim 1, wherein the nitrification process is performed by introducing one of N_2O and NO of 1-20 into a furnace at a temperature of 810-850°C for 10-20 minutes, thus forming a nitrogen layer of 3-5Å in thickness in the lower oxide film.



5.(Amended) The method according to claim 1, wherein the annealing process using an oxygen gas is performed by introducing the oxygen gas of 5-20 into a furnace at a temperature of 850-950°C for 5-20 minutes.

6.(Amended) The method according to claim 1, wherein the upper oxide film is formed using DCS gas and one of N_2O and NO gas at a temperature of 810-850°C.

7.(Amended) The method according to claim 1, wherein the upper oxide film is formed to a thickness of 35-100Å at a deposition rate of 4-10Å/min.

8.(Amended) The method according to claim 1, wherein the second polysilicon film is formed in a double structure of a doped polysilicon film and an undoped polysilicon film.

9.(Amended) The method according to claim 8, wherein the polysilicon film and the undoped polysilicon film are deposited at a ratio of 4:1-7:1.